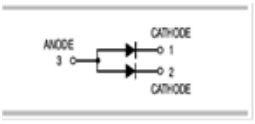
Small Signal Schottky Barrier Diode

BAT54ALIR

Features

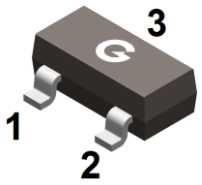
HF

- Low turn-on voltage
- Fast switching
- Ultra-small surface mount package
- PN junction guard for transient and ESD protection



Application

- Schottky barrier detector and switching diodes



SOT-23

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BAT54ALIR	SOT-23	3000 pcs / Tape & Reel	LKL2

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Working Peak Reverse Voltage	V_{RWM}	30	V
DC Reverse Voltage	V_R	30	V
Forward Continuous Current	I_F	200	mA
Peak Forward Surge Current (t_p = 1s)	I_{FSM}	600	mA
Repetitive Peak Forward Current	I_{FRM}	300	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	250	mW
Thermal Resistance (Junction-to-Ambient) *1	$R_{\Theta JA}$	280	°C/W
Thermal Resistance (Junction-to-Case) *1	$R_{\Theta JC}$	190	°C/W
Thermal Resistance (Junction-to-Lead) *1	$R_{\Theta JL}$	200	°C/W
Operating junction Temperature	T_J	-55 ~ +125	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	I_R = 100μA	30	-	-	V
Forward Voltage *2	V_{F1}	I_F = 0.1mA	-	-	240	mV
	V_{F2}	I_F = 1.0mA	-	-	320	mV
	V_{F3}	I_F = 10mA	-	-	400	mV
	V_{F4}	I_F = 30mA	-	-	500	mV
	V_{F5}	I_F = 100mA	-	-	800	mV
Maximum Peak Reverse Current *3	I_R	V_R = 25V, T_J = 25°C	-	-	2	μA
		V_R = 3.3V, T_J = 85°C	-	-	8	μA
Reverse Recovery Time	t_{rr}	I_F = I_R = 10mA I_{rr} = 0.1XI_R, R_L = 100Ω	-	-	5	ns
Typical Junction Capacitance	C_J	V_R = 1V, f = 1MHZ	-	-	15	pF

Notes:

1. The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper
2. Pulse test, tp ≤ 300μs
3. Pulse test, tp ≤ 5ms

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

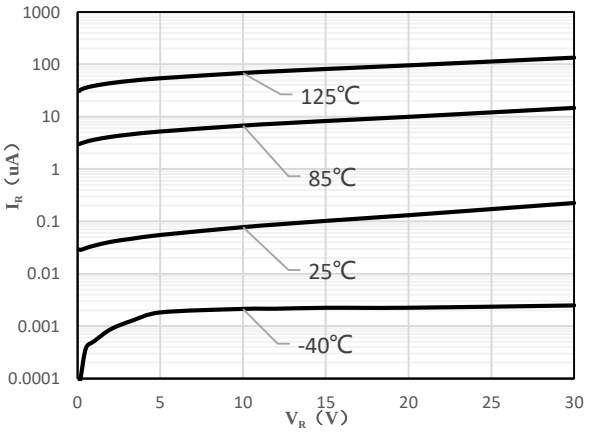


Fig 1 Typical Reverse Characteristic

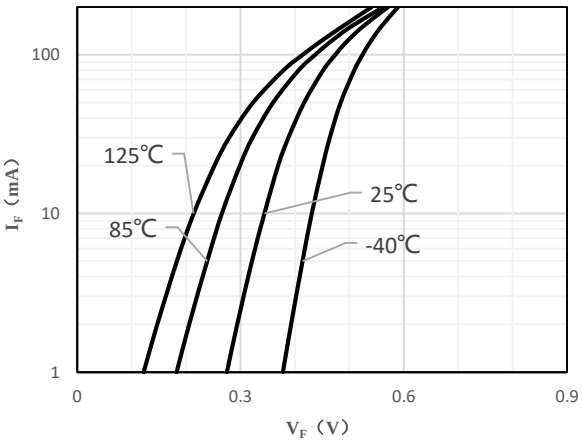


Fig 2 Typical Forward Characteristics

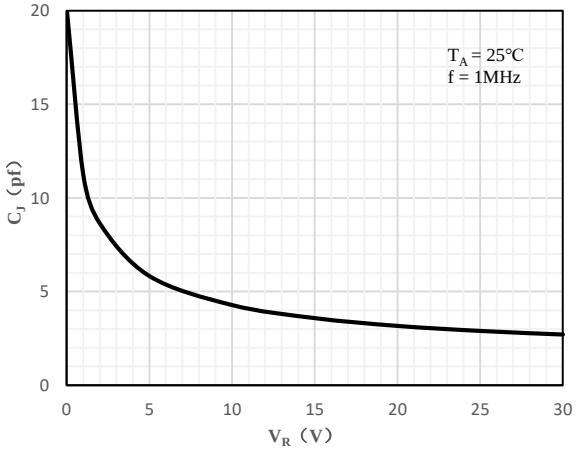


Fig 3 Capacitance Characteristics

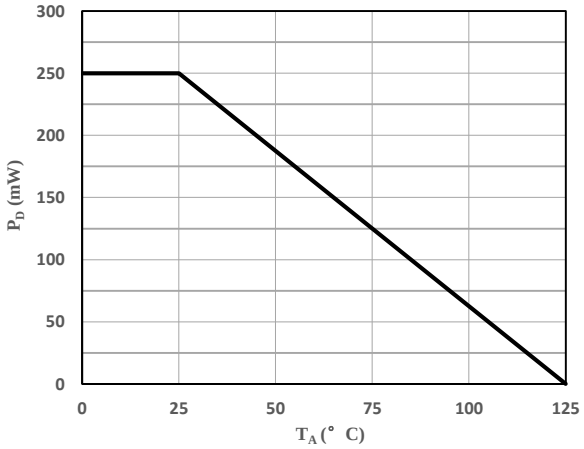
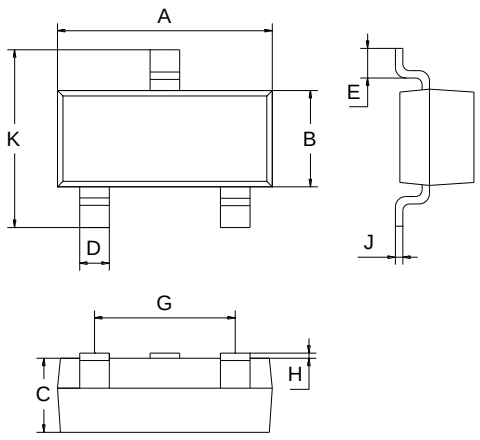


Fig 4 Derating Curve

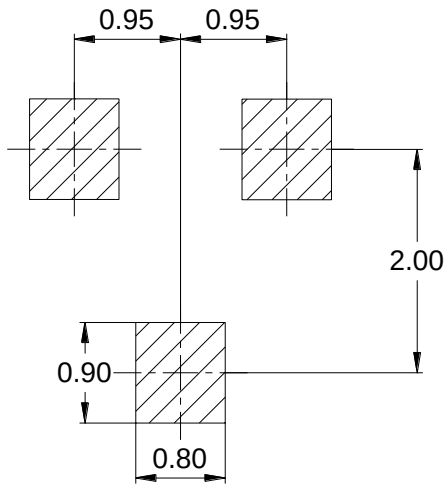
Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23



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